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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

RMD

FOREST INSECT SURVEY - PLUMAS NATIONAL FOREST SEASON OF 1937.

by
K. A. Salman
Berkeley, California
January 31, 1938

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Forest Insect Laboratory
Berkeley, California
January 31, 1938

FOREST INSECT SURVEY - PLUMAS NATIONAL FOREST SEASON OF 1937.

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FOREST INSECT SURVEY - PLUMAS NATIONAL FOREST
SEASON OF 1937.

by K. A. Salman

The 1937 survey of insect-caused losses in the Eastern Plumas Working Circle was made during mid-October by a Bureau of Entomology and Plant Quarantine field crew under the direction of J. W. Bongberg. Four plots in virgin stands and two that were established during 1934 in cutover stands were cruised to bring their loss records up to date. No cruise has been made in this working circle since 1935, and the cutover plots have not been cruised since they were established in 1934.

Loss Records and Estimates

The plot record averages (Table I) show the 1936 infestation to have destroyed about half the volume that was destroyed in 1935. The 1937 infestation is estimated to have killed a trifle more timber than was killed during 1936.

The estimates of losses in the several units, the boundaries of which are shown in Figure 1, are listed in Table II. In general the totals of the estimates follow the plot averages closely. However, approximately 12,000 acres that have been cutover since the last record are not included in the 1937 calculations. Actually our estimates for 1937 indicate an increased per acre loss to care for heavier infestations which are known to exist, but which are but partially sampled by the plots.

The loss records for the two curover plots are given below. No attempt has been made to segregate the losses by years as that is almost impossible to do accurately when several years elapse between cruises.

LOSS RECORD ON CUTOVER PLOTS

Plot designation	CO 23	CO 24
Pine stand, 1932	2640 b.m. per acre	1940 b.m. per acre
Losses, 1932-33	120 b.m. per acre	69 b.m. per acre
Losses, 1934-36	24 b.m. per acre	73 b.m. per acre
Losses, 1937 (incomplete)	11 b.m. per acre	12 b.m. per acre
Total loss record - % of stand, 6 year period	5.9	7.9
Gross increment - % of stand	7.5	11.2

General Infestation Conditions

Losses in ponderosa pine have decreased greatly during the past three years. Accordingly, the plots sampling such stands have shown the more marked decreases. During 1937 fewer trees were infested, but they chiefly were the larger, over-mature individuals which brought up the volume of loss. In Jeffrey pine stands the decrease in 1936 losses was

due largely to a drop from epidemic conditions in the ponderosa pine portion of the stand and a less precipitate drop in the losses in Jeffrey pine. In 1937 further decreases occurred in ponderosa pine losses on those areas although they were more than offset by increased activity on the part of the jeffrey pine beetle and of the California flatheaded borer in Jeffrey pine.

Infestation Centers

The Clover Valley Lumber Company has logged off most of the heavy loss area in Squaw Valley. Two fairly large areas in which infestation centers have been noted since cruises were started in the Eastern Plumas area now remain to be treated. The Willow Creek area, which is sampled by the plot P-2 should be considered for logging as soon as possible. In addition, parts of the Dixie Valley area have sustained relatively heavy infestations for some time.

Recommendations

The program for logging Squaw Valley fitted in well with a program for the utilization of highly susceptible stands. It is apparent that utilization of other high loss areas in the eastern Plumas working circle will not fit as well into the present logging plans. In particular that statement applies to the Willow Creek area. In those stands losses have averaged 275 b.m. per acre per year since the start of the record in 1932, yet, under present plans, they may not be logged for some time to come.

As much of this drain is the result of a relatively constant high loss level due largely to poor site conditions, direct control measures do not appear to be satisfactory to meet existing conditions in these commercial forests. However, if action can be taken to reduce the volume loss in areas suffering from chronic heavy infestations , it should be possible to secure a higher rate of utilization of the resources of the working circle. Thought should be given to changes in the present operations program that would provide for the logging of high loss areas first. In addition, thought should be given to the development of new methods of management and new facilities for logging. The object of these methods should be to reduce the drains that year after year and over the entire working circle destroy values that could be utilized if they could be brought to the mill at reasonable cost. Probably the greatest need for adequate management of this area is the development of methods that will take the greater portion of insect-caused drain out of the picture and transfer its values to production.

One particularly disturbing element concerning the future sustained yield possibilities of the working circle and the part forest insects will play in determining the yield, is introduced by the cutover plot loss records. Although they are of short duration, they show that over the period of the past six years from two thirds to three fourths of the expected growth on those plots has been offset by losses in the reserve. If that continues, the future production of the working circle may be much less than the area can produce.

TABLE I.

Measured Plot Losses, Plumas National Forest - Per Section Basis

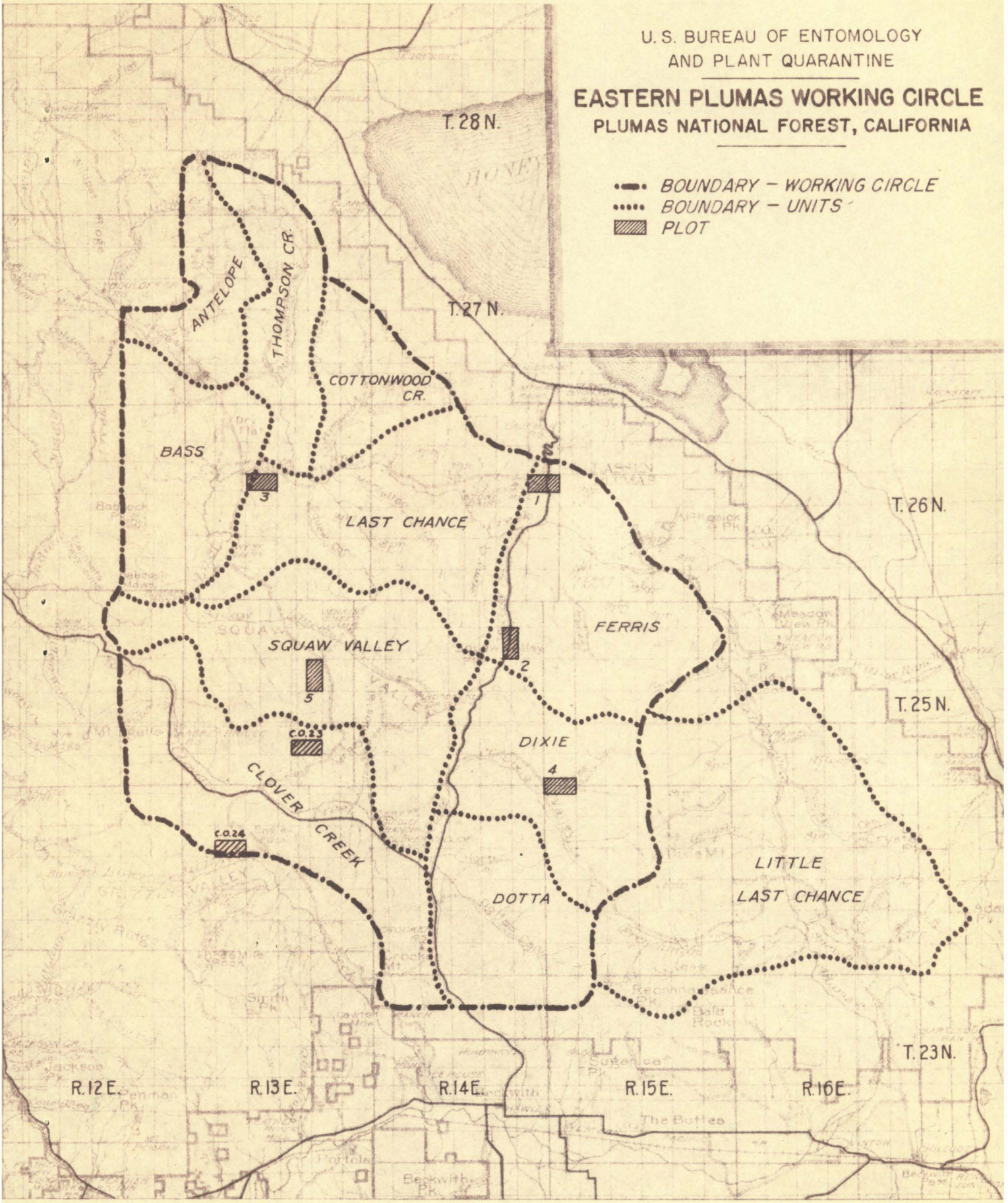
Plot No.	1935 Trees	1935 Vol. BM	1935 BM/Ac	1935 % 1934 infestation	1936 Trees	1936 Vol. BM	1936 BM/Ac	1936 % 1935 infestation	1937 Estimates Trees	1937 Estimates Vol. BM	1937 Estimates BM/Ac	1937 Estimates % 1936 infestation
P-1	122	104200	163	152	48	53860	84	52	68	57680	90	107
P-2	202	190320	297	105	120	101260	158	53	64	83720	131	83
P-3	34	62980	98	101	12	17820	28	28	8	21280	33	119
P-4	78	88860	139	113	50	37900	59	43	48	53700	84	142
P-5	Cutover 1935 - 1936											
Ave.	109	111590	174	114	57	52710	82	47	47	54090	84	103

TABLE II.

Estimated Unit Losses in Virgin Stands, Plumas National Forest

Unit	Timbered acres 1937	1935 Per Section Trees	1935 Per Section Vol. BM	1935 Per Unit Trees	1935 Per Unit Vol.MBM	1936 Per Section Trees	1936 Per Section Vol.BM	1936 Per Unit Trees	1936 Per Unit Vol.MBM	1937 Per Section Trees	1937 Per Section Vol.BM	1937 Per Unit Trees	1937 Per Unit Vol.MB
Bass	14660	35	63000	800	1440	15	22300	340	510	11	26300	250	600
Last Chance	23260	93	90400	3380	3280	36	41850	1310	1520	48	45500	1740	1650
Ferris	19200	186	173100	5580	5190	106	91780	3180	2750	65	78510	1950	2360
Squaw Valley	8100*	75	106100	1890	2670	50	70800	950	1340	43	74340	540	940
Dixie Valley	15940	78	88860	1940	2210	60	45500	1490	1130	57	64400	1420	1600
TOTALS	81160			13590	14790			7270	7250			5900	7150

* Approximately.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EASTERN PLUMAS WORKING CIRCLE
PLUMAS NATIONAL FOREST, CALIFORNIA
BOUNDARY – WORKING CIRCLE
BOUNDARY – UNITS
PLOT
T. 28 N.
T. 27 N.
T. 26 N.
T. 25 N.
T. 23 N.
R. 12 E.
R. 13 E.
R. 14 E.
R. 15 E.
R. 16 E.
ANTELOPE
THOMPSON CR.
COTTONWOOD CR.
BASS
LAST CHANCE
FERRIS
SQUAW VALLEY
DIXIE
CLOVER CREEK
DOTTA
LITTLE LAST CHANCE
C.O. 23
C.O. 24
1
2
3
4
5